

# AEDC

Arnold Engineering Development Center  
Arnold Air Force Base, Tenn. 37389

An Air Force Materiel Command Test Facility



*Test Before Flight*

## 10V Space Chamber

The 10V Space Chamber is a state-of-the-art deep space environment simulation test facility designed to test high performance interceptors and surveillance sensors. The chamber shares vehicle handling and target systems with the 7V Space Chamber as well as support infrastructure. The facility consists of a 10-foot-diameter by 30-foot-long chamber containing a full gaseous helium thermal shroud and an optically clean vacuum pumping system. A 300,000-pound seismic mass allows vibration isolation of the optical bench and all optical elements. The chamber is surrounded by a class 1000 clean room.

### Capabilities:

Thermal Control	A gaseous helium shroud permits deep space environment simulation down to 20 degrees Kelvin.
Vacuum Range	$\leq 1 \times 10^{-7}$ Torr $5 \times 10^{-7}$ Torr to local atmospheric pressure.
Working Volume	10-foot-diameter x 30-foot-long.
Support Structure	300,000-pound seismic mass system provides an optical line-of-site vibrational stability of the internal optical bench of less than 1 microradian.
Pumping System	Turbo molecular and cryogenic shroud capable of temperatures down to 20 degrees Kelvin.
Loading	Horizontal: 10-foot opening at each end.
Cold Wall	Full gaseous helium cryogenic shroud capable of temperatures down to 20 degrees Kelvin.
Special Features	Chamber is housed within a Class 1000 clean room. A Class 100 clean tent is available for high cleanliness requirements.
Data	All facility data time tagged and archived. Test article data archived if requested.
Work Areas	Test customer offices available. Limited hardware storage available.
Solar Simulation	Infrared lamp arrays available on request.
Contact	Bobby W. Smith (931) 454-6519 <a href="mailto:bobby.w.smith@arnold.af.mil">bobby.w.smith@arnold.af.mil</a>



10V Mirror Test

Photo # PADR00-36



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